

REMARKS

Applicants have carefully considered the April 11, 2005 Office Action, and the amendments above together with the comments that follow are presented in a bona fide effort to address all issues raised in that Action and thereby place this case in condition for allowance.

Claims 1-18 were pending in this application. Claims 11-18 have been withdrawn from consideration pursuant to the provisions of 37 C.F.R. § 1.142(b). In response to the Office Action dated April 11, 2005, claim 3 has been canceled and claims 1 and 2 have been amended. Claim 2 has been amended to correct a typographical error in the preamble. Claim 1 has been amended to further include the subject matter of claim 3 (now canceled). The Title of the Invention has been amended in substantial accordance with the Examiner's suggestion.

Care has been exercised to avoid the introduction of new matter. Adequate descriptive support for the present Amendment should be apparent throughout the originally filed disclosure as, for example, the depicted embodiments and related discussion thereof in the written description of the specification.

The Examiner objected to the title and proposed a new title on page 2 of the Office action. Applicants have amended the Title of the Invention in substantial accordance with the Examiner's suggestion. Accordingly, reconsideration and withdrawal of the objection are solicited.

The Examiner objected to the specification for allegedly not providing antecedent support for the recited subject matter of claim 3. Applicants respectfully traverse the objection and direct the Examiner's attention to page 4, lines 17-21 of the specification, wherein support for the subject matter of claim 3 is supported. Accordingly, reconsideration and withdrawal of the objection are solicited.

The Examiner objected to claim 1 and asserted that the claimed plasma-treatment is “completely different” from the plasma deposit disclosed in the specification. Applicants respectfully traverse the Examiner’s objection and direct the Examiner’s attention to page 7, lines 3-5 of the specification, wherein the step of plasma-treating may include a step of forming a thin film on the hole injecting layer by plasma chemical vapor deposition. Thus, the specification is consistent with the claimed subject matter of claim 1. Accordingly, reconsideration and withdrawal of the objection are solicited.

Claims 1-10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hung (U.S. Pat. No. 6,208,077, hereinafter “Hung”). Claim 3 has been canceled and, therefore, the rejection is moot with respect to this claim. Moreover, claims 1-2 and 4-10 are free from the applied art for the reasons set forth *infra*.

The Examiner, at pages 3-6 of the Office action, stated that Hung (FIG. 2) teaches all of the limitations of independent claim 1, but for a thin film on the surface of the hole injecting layer 206 on the side of the light emitting layer 214. The Examiner concluded that it would have been obvious to form a thin film 306 (FIG. 3) on the hole injecting layer 206 of device 200 (FIG. 2), because including a thin film 306 between the hole injecting layer 206 and the hole transporting layer 212 would enhance the operational stability of the device, as suggested by the Hung. Applicants respectfully traverse.

Independent claim 1, as amended, discloses an organic electroluminescent device comprising a hole injecting electrode, a hole injecting layer, a light emitting layer, and an electron injecting electrode formed in this order. The device comprises a thin film formed by plasma-treatment on a surface of said hole injecting layer on the side of said light emitting layer. The thin film is formed of a material selected from the group consisting of carbon based

material, silicon based material, silicon carbide based material, and cadmium sulfide based material.

Hung discloses an organic electroluminescent device 200 shown as prior art in Fig. 2, comprising a CuPc layer 206, a hole transporting layer 212 and a light emitting layer 215, formed in this order on an anode 204. Further, in an organic electroluminescent device 300 shown in Fig. 3 of Hung, a thin plasma polymer film 306, a hole transporting layer 312 and a light emitting layer 314 are formed in this order on an anode.

As described above, Hung teaches a concept of forming the thin plasma polymer film 306 between the anode 304 and the hole transporting layer 312 in place of forming the CuPc layer 206 between the anode 204 and the hole transporting layer 212. Hung does not disclose or suggest a structure in which the CuPc layer and the thin plasma polymer film are provided between the anode and the hole transporting layer or its working effect. Also, Hung fails to disclose or suggest a structure including both a hole injection layer and a hole injection electrode.

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge readily available to one of ordinary skill in the art. *In re Kotzab*, 217 F.3d 1365, 1370 55 USPQ2d 1313, 1317 (Fed. Cir. 2000); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992); *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). That burden has not been established. As discussed above, the applied reference does not yield the claimed invention as a whole and, therefore, the rejection should be withdrawn. *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 5 USPQ2d 1434 (Fed. Cir. 1988). Indeed, the only basis for motivation to modify the applied reference is found in Applicants' disclosure, which is forbidden territory on which the Examiner may excavate for the motivational element. *Panduit Corp. v.*

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Dennison Mfg. Co., 774 F.2d 1082, 227 U.S.P.Q. 337 (Fed. Cir. 1985). Moreover, as described in the present specification, the use of a plasma-treated thin film enables an increased film thickness of the hole transporting layer while maintaining a low drive voltage of the organic electroluminescent device, resulting in the realization of a display panel with less defective pixels.


Accordingly, for the reasons outlined above, the rejection under 35 U.S.C. § 103(a) is not legally viable. Applicants, therefore, solicit the Examiner to withdraw the rejection of claims 1-2 and 4-10 under 35 U.S.C. § 103.

It is believed that all pending claims are now in condition for allowance. Applicants therefore respectfully request an early and favorable reconsideration and allowance of this application. If there are any outstanding issues which might be resolved by an interview or an Examiner's amendment, the Examiner is invited to call Applicants' representative at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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